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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 10/816,524

Filing Date: April 01, 2004

Appellant(s): SCHALK, HUBERT

Alfred Forebrich
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 4/10/2008 appealing from the Office action mailed 8/14/2007.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

1,471,755	Schmidt	10-1923
4,811,688	Turner	3-1989
6,527,029	Ryser	2-2003
5,118,214	Petrzelka et al.	6-1992

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-2, 8, 14-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schmidt (1471755) in view of Turner (4811688).

Schmidt discloses a folding device comprising a folding drum (7, figs. 3-4) comprising two opposing side walls (7, fig. 4) and a carrier (undesignated, see figs. 3-4) connected to the folding drum at a location between the side walls, the carrier has a small material thickness in a longitudinal direction of the folding device and a large area extending approximately over the entire cross section of an interior of the folding drum in a transverse direction of the folding device (note cross-section extending diametrically in order to carry 5 shafts), a folding-blade shaft (35, figs. 2-4) having two ends, each of the two ends of the folding-blade shaft being rotatably mounted in a respective one of the sides walls in the folding drum, the folding-blade shaft having at least two folding-blade carriers (see fig. 4) for holding folding blades (15, figs. 2-4), a pair of bearings arranged in the side walls of the folding drum (see fig. 4), the ends of the folding-blade shaft (35) being mounted respectively in the side walls by the pair of bearings, at least one further bearing (see fig. 4) arranged in the carrier, wherein the folding-blade shaft is

further rotatably supported in the carrier by the at least one further bearing between the ends of the folding-blade shaft.

Schmidt, as mentioned above, discloses that the carrier has a small material thickness in a longitudinal direction of the folding device and two folding blades (15) spaced apart from one other (see fig. 4). Schmidt does not disclose expressly that the folding blades are spaced apart from one another by a distance smaller than 10 millimeters. At the time the invention was made, it would have been an obvious matter of design choice to a person of ordinary skill in the art to space the folding blades apart by 10 millimeters to improve the fold quality or to accommodate the change in material characteristics or change in working conditions because since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

Schmidt, as mentioned above, meets all the limitations except the bearings are self-aligning roller bearings. Turner teaches that it known to support shaft (roller 30, fig. 1) in self-aligning roller bearings. It would have been obvious to one having ordinary skill in the art at the time the invention was made to support the folding blade shaft of Worthington et al. in the self-aligning roller bearings, as taught by Turner, since Turner states at col. 2, lines 48- 51 that such a modification would reduce friction to a minimum.

Regarding claim 2, Schmidt discloses that the at least one further bearing is arranged between adjacent ones of the at least two folding-blade carriers.

Regarding claims 8 and 16, Schmidt, as mentioned above, discloses that the one further bearing being supported on the carrier and the carrier is connected to the drum (see fig. 1). Schmidt does not disclose expressly that the carrier is connected to the drum by threaded connection. It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide threaded connection since it was known in the art that provide threaded connection to connect two parts.

Schmidt, as mentioned above, discloses all the claimed limitations of claims 14-15 and 17.

3. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Schmidt (1471755) and Turner (4811688) as applied to claim 1 above, and further in view of Ryser (6527029).

The folding device of Schmidt as modified by Turner, meets all the limitations of claim 5, except for central lubricating system to supply lubricating medium to the bearings. However Ryser teaches to provide the central lubrication system (32, fig. 5) to lubricate the bearings (31, fig. 5) of the driving shaft (see col. 3, lines 46- 60). Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to having provided the central lubrication system as taught by Ryser in the modified folding device of Schmidt to lubricate the bearings of folding blade shaft.

4. Claims 10-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schmidt (1471755) and Turner (4811688) as applied to claim 1 above, and further in view of Petrzelka et al. (5118214).

The modified folding machine of Schmidt, as mentioned above, disclose all the claimed limitations of claims 10-13, except for the drive pinion (34, fig. 4) is connected to the folding shaft with form-fitting connection. However, Petrzelka et al. Teaches a form-fitting connection by serrated teething (see figs. 1-2) to provide simple design which ensures problem-free transmission of the necessary torque values (see col. 2, lines 30-33) between connecting piece (1, fig. 1) and shaft (7, fig. 1). Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to connect the drive pinion of Worthington et al. to the folding shaft with form-fitting connection as taught by Petrzelka et al. to provide simple design which ensures problem-free transmission of the necessary torque values between drive pinion and the folding blade shaft.

5. Claims 18-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schmidt (1471755) in view of Turner (4811688).

Schmidt, as mentioned above, meets all the limitations except the bearings are self-aligning roller bearings. Turner teaches that it known to support shaft (roller 30, fig. 1) in self-aligning roller bearings. It would have been obvious to one having ordinary skill in the art at the time the invention was made to support the folding blade shaft of Worthington et al. in the self-aligning roller bearings, as taught by Turner, since Turner states at col. 2, lines 48- 51 that such a modification would reduce friction to a minimum.

(10) Response to Argument

In response to appellant's arguments, regarding claims 1 and 14 that it would not be an obvious matter of design choice to space the folding blades apart by 10

millimeters based on Schmidt (page 6, lines 2-3). Note that Schmidt discloses the carrier (undesignated in fig. 4) has a small material thickness in a longitudinal direction of the folding device and a large area extending approximately over the entire cross section of an interior of the folding drum in a transverse direction of the folding device (note cross- section extending diametrically in order to carry five shafts in fig. 3), a folding-blade shaft (35, figs. 2-4) having two ends, each of the two ends of the folding-blade shaft being rotatably mounted in a respective one of the sides walls in the folding drum, the folding-blade shaft having at least two folding-blade carriers (see fig. 4) for holding folding blades (15, figs. 2-4), a pair of bearings arranged in the side walls of the folding drum (see fig. 4), the ends of the folding-blade shaft (35) being mounted respectively in the side walls by the pair of bearings, at least one further bearing (see fig. 4) arranged in the carrier, wherein the folding-blade shaft is further rotatably supported in the carrier by the at least one further bearing between the ends of the folding-blade shaft. Schmidt does not disclose expressly that the folding blades are spaced apart from one another by a distance smaller than 10 millimeters. Since Schmidt disclose the small material thickness of carrier it is possible to arrange the folding blades close to each other (see paragraph 0012 of the application). Schmidt does not disclose expressly that the folding blades are spaced apart from one another by a distance smaller than 10 millimeters. But it would have been an obvious to a person of ordinary skill in the art to space the folding blades apart by 10 millimeters, because since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the

art. It requires only routine skill in the art to increase or decrease the thickness of the carrier, when all the claimed limitations are disclosed by Schmidt, to adjust the distance between the two folding blades to be 10 millimeter or less. And therefore, it would have been an obvious matter of design choice to space the folding blades apart by 10 millimeter. In response to appellant's arguments, on page 6, that Aller has nothing to do with determining the patentability of an apparatus claim. Rather, *In re Aller* is directed to determining the patentability of a process claim. Note that Examiner is relying on the Aller case law to show that when, as explained above, the general conditions are met the all the claimed discovering the optimum or workable ranges, in this case the distance between two folding blade carriers, involves only routine skill. In response to applicant's argument, Schmidt discloses that the carrier has small material thickness (see fig. 4) and large area (see the cross-section extending diametrically in order to carry 5 shafts in fig. 3) and a further third bearing (fig. 4).

Appellant's argument regarding claim 19, on page 8, note that, as explained above, Schmidt does disclose that the carrier has small thickness across the longitudinal and a large area extending approximately over the entire cross section of an interior of the folding drum in a transverse direction of the folding device (note cross-section extending diametrically in order to carry 5 shafts). It would have been obvious to one having ordinary skill in the art at the time the invention was made to use sheet metal blank, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/Hemant M Desai/

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